



MATHEMATICS

03

Paper 1

October 2023

Marks: 60

TIME: 90 Minutes

INSTRUCTIONS

1. Answer all questions on the answer sheet provided.
2. When you are told to begin, work as fast and as accurately as you can. If you cannot answer a question, do not spend too much time on it; go to the next question and come back to it later.
3. You may do rough work on the test paper or on a sheet of blank paper. **DO NOT** use the answer sheet for rough work.
4. Four possible answers are given for each question. Select the answer you think is the best and fill the oval for that answer on your answer sheet.
5. **Be sure to fill the ovals like this:** Erase completely answers that you wish to change. **DO NOT** make any stray marks on your answer sheet. If more than one oval is filled for a question it will be marked wrong. Be sure the oval you fill on your answer sheet is for the question you are working on in the test paper. **DO NOT mark the ovals like this:** If you do, your answers will be marked wrong.
6. Sample questions are given to help you. Read them carefully before doing the questions.

YES

17 (A) (B) ● (D)
18 (A) (B) (C) ●
19 ● (B) (C) (D)

NO

1 (A) (B) (C) (D)
2 (A) (B) (C) (D) ✗
3 (A) ● (C) (D)
4 (A) (B) (C) (D) ✓

SAMPLE QUESTIONS

1. Work out

$$\begin{array}{r} 1.1 \\ + 0.4 \\ \hline \end{array}$$

- A 1.5
- B 1.3
- C 0.7
- D 0.6

SAMPLE 1

● (B) (C) (D)

2. Work out

$$\begin{array}{r} 3.5 \\ - 0.9 \\ \hline \end{array}$$

- A 4.4
- B 4.6
- C 2.8
- D 2.6

SAMPLE 2

(A) (B) (C) ●



This question paper contains 17 printed pages.

1. Round off 1450 to the nearest thousand.
- A 1000
 - B 1400
 - C 1500
 - D 2000
2. What is 200 304 when expressed in words?
- A Two thousand and three hundred and four
 - B Two hundred three hundred and four
 - C Two hundred thousand three hundred and four
 - D Two hundred thousand and thirty four
3. Which of the following statements is true?
- A $3.40 > 3.04$
 - B $6.15 > 6.51$
 - C $8.50 < 8.31$
 - D $9.63 < 9.60$
4. What is the ratio 240:30 in its simplest form?
- A 24:1
 - B 10:3
 - C 8:3
 - D 8:1
5. A village has a population of 350 000 people. 100 090 of the population are children and youth. 157 500 of the population are of middle age. The rest are old age pensioners.
How many old age pensioners are in that village?
- A 107 590
 - B 102 410
 - C 92 510
 - D 92 410
6. What is 27 036 when written in expanded form?
- A $(2 \times 10\ 000) + (7 \times 10\ 000) + (0 \times 1000) + (3 \times 100) + 6$
 - B $(2 \times 10\ 000) + (7 \times 1000) + (0 \times 100) + (3 \times 10) + 6$
 - C $(2 \times 1000) + (7 \times 1000) + (3 \times 100) + 6$
 - D $(2 \times 1000) + (7 \times 100) + (3 \times 10) + 6$
7. Work out $8\ 838 \div 3$.
- A 2276
 - B 2279
 - C 2946
 - D 2949

8. What is ten thousand and one when written in numerals?

- A 10 001
- B 10 101
- C 100 001
- D 100 101

9. Arrange the following fractions $\frac{3}{4}, \frac{2}{5}, \frac{2}{3}, \frac{1}{2}$ in order, starting with the **smallest**.

A $\frac{3}{4}, \frac{2}{5}, \frac{2}{3}, \frac{1}{2}$

B $\frac{3}{4}, \frac{2}{3}, \frac{1}{2}, \frac{2}{5}$

C $\frac{2}{5}, \frac{1}{2}, \frac{2}{3}, \frac{3}{4}$

D $\frac{1}{2}, \frac{2}{3}, \frac{3}{4}, \frac{2}{5}$

10. Which of the following statements correctly shows the associative law of addition?

- A $8 + (5 + 4) = (8 + 5) + 4$
- B $(8 + 4) + 5 = (8 + 5) + 4$
- C $4 + (8 + 5) = 5 + (8 + 4)$
- D $(5 + 4) + 8 = 5 + (8 + 4)$

11. Which of the following is a triangular number?

- A 13
- B 12
- C 11
- D 10

12. What is the lowest common multiple of 12 and 15?

- A 75
- B 60
- C 48
- D 36

13. The price of a shirt was decreased from P200 to P160.
What is the percentage decrease in the price of the shirt?

- A 70%
- B 30%
- C 25%
- D 20%

14. What is the value of $\left(\frac{3}{4} - \frac{1}{2}\right) + 5.25$ expressed as a fraction?

A $5\frac{1}{8}$

B $5\frac{1}{2}$

C $5\frac{3}{4}$

D $5\frac{7}{8}$

15. Work out $4\frac{3}{5} - 1\frac{2}{3}$

A $6\frac{4}{15}$

B $2\frac{14}{15}$

C $2\frac{9}{15}$

D $2\frac{4}{15}$

16. What is the value of $25 - 5 \times 36 \div 9 + 3$?

A 83

B 60

C 10

D 8



An incomplete bill is shown below. Use it to answer question 17.

Sharp Restaurant P O Box 100 Lapo		NO: 6789 A Date: 22/02/2022	
Description	Quantity	Unit Price	Total
12.5 kg maize meal	2	P	P125.00
2 kg rice	4	P45.00	P
		Total Cost	P305.00

17. What is the price of one bag of 12.5 kg maize meal?

- A P62.10
- B P62.50
- C P180.00
- D P250.00

18. Andrew got P67.00 as his change.
What is the highest number of P10 notes can he get?

- A 4
- B 5
- C 6
- D 7

19. A 120 metre rope is cut into $\frac{3}{4}$ metre lengths.
How many metre lengths will be cut from the rope?

- A 160
- B 90
- C 44
- D 10

20. Kagiso and Tom are to share 80 goats in the ratio of 3:5.
How much will Tom get?

- A 30 goats
- B 32 goats
- C 48 goats
- D 50 goats

21. Which law of operation is shown below?
 $2 \times (5 + 6) = (2 \times 5) + (2 \times 6)$

- A Associative
- B Commutative
- C Distributive
- D Identity element



22. What is 56% when expressed as a decimal?

- A 0.056
- B 0.56
- C 5.6
- D 56.0

23. What is the place value of digit 2 in the number 9 274?

- A Thousands
- B Hundreds
- C Tens
- D Units

24. Estimate the value of $296 + 17$.

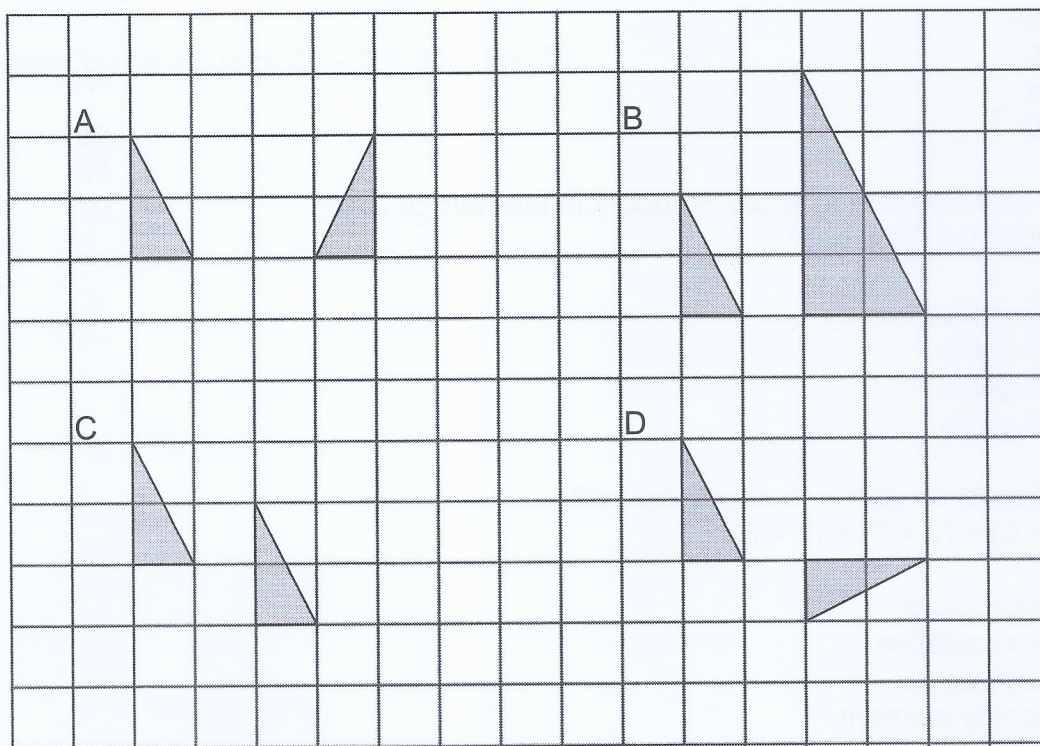
- A 210
- B 220
- C 310
- D 320

25. What type of angle is marked x, in the diagram below?



- A Straight
- B Reflex
- C Obtuse
- D Acute

26. Which of the diagrams below show a translation?



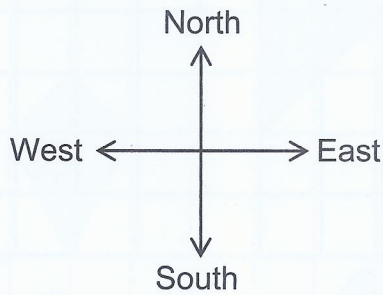
27. What is the name of a polygon with seven sides?

- A Heptagon
- B Hexagon
- C Octagon
- D Pentagon

28. How many lines of symmetry does a rectangular table top have?

- A 4
- B 3
- C 2
- D 1

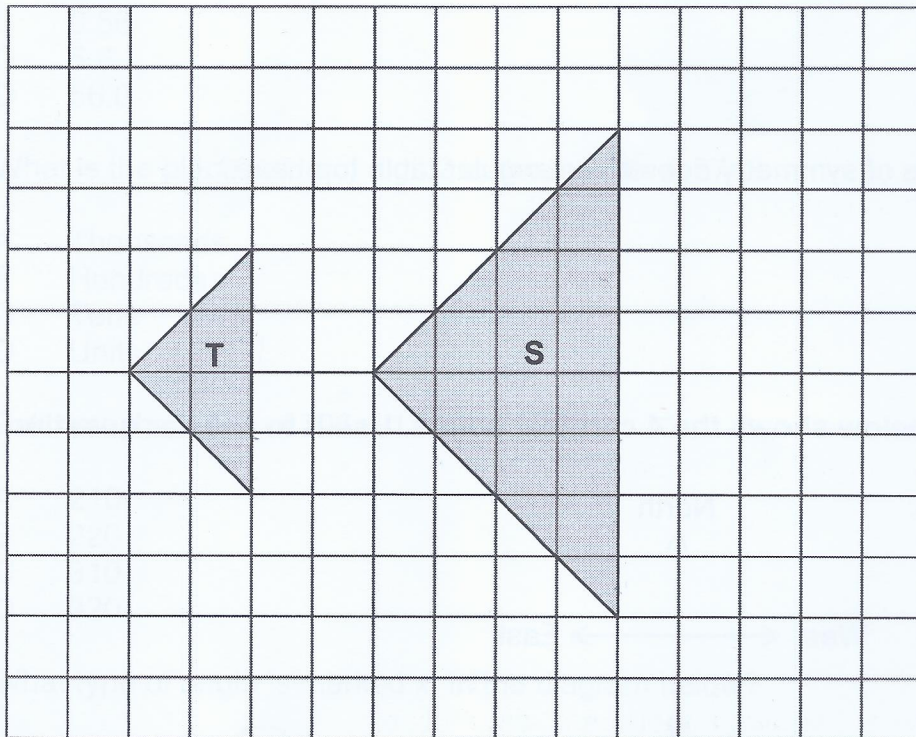
The diagram below shows the 4 cardinal points. Use it to answer question 29.



29. A girl turns anti-clockwise from West to North.
What is the size of the angle that she turns through?

- A 360°
- B 270°
- C 180°
- D 90°

The diagram below shows an enlargement of shape T onto shape S.
Use it to answer question 30.

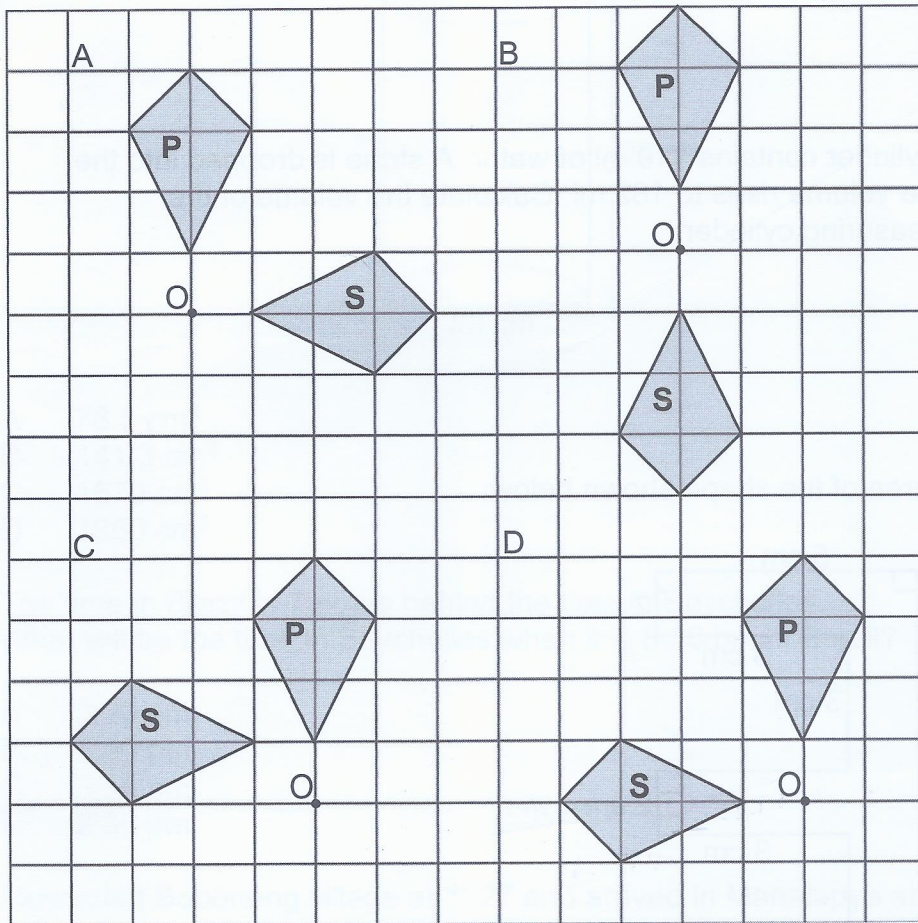


30. What is the scale factor of the enlargement?

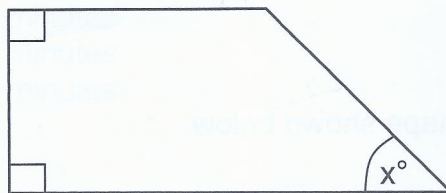
- A 2
- B 4
- C 6
- D 8



31. In the diagrams below, kite **S** is the image of kite **P**. Which diagram shows a rotation of 270° clockwise about point **O**?



32. Estimate the size of the angle marked x° in the shape below.



- A 55°
 B 90°
 C 125°
 D 290°
33. Which of the years below was a leap year?
- A 2010
 B 2006
 C 1980
 D 1962

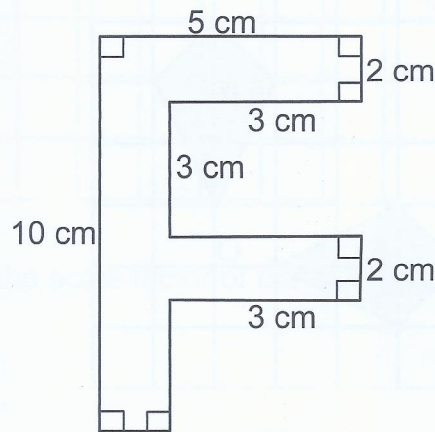
34. What is 3850 metres when expressed in kilometres (km)?

- A 385 km
- B 38.5 km
- C 3.85 km
- D 0.385 km

35. A measuring cylinder contains 119 ml of water. A stone is dropped into the cylinder and the volume rises to 182 ml. Calculate the volume of the stone in the measuring cylinder.

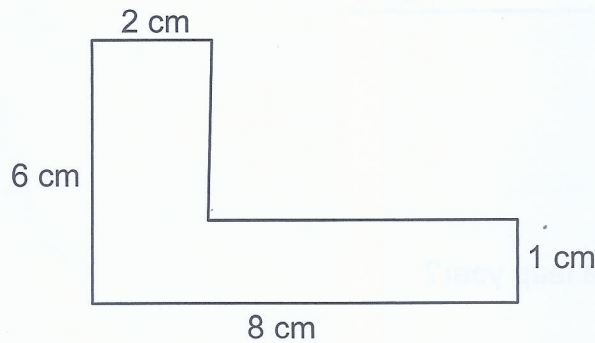
- A 301
- B 291
- C 77
- D 63

36. Calculate the area of the shape shown below.



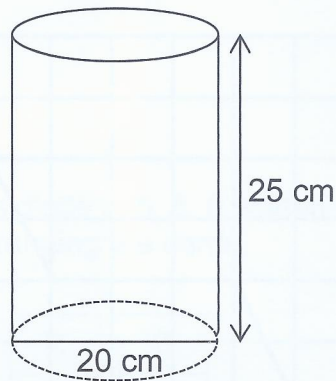
- A 28
- B 32
- C 34
- D 36

37. Calculate the perimeter of the shape shown below.



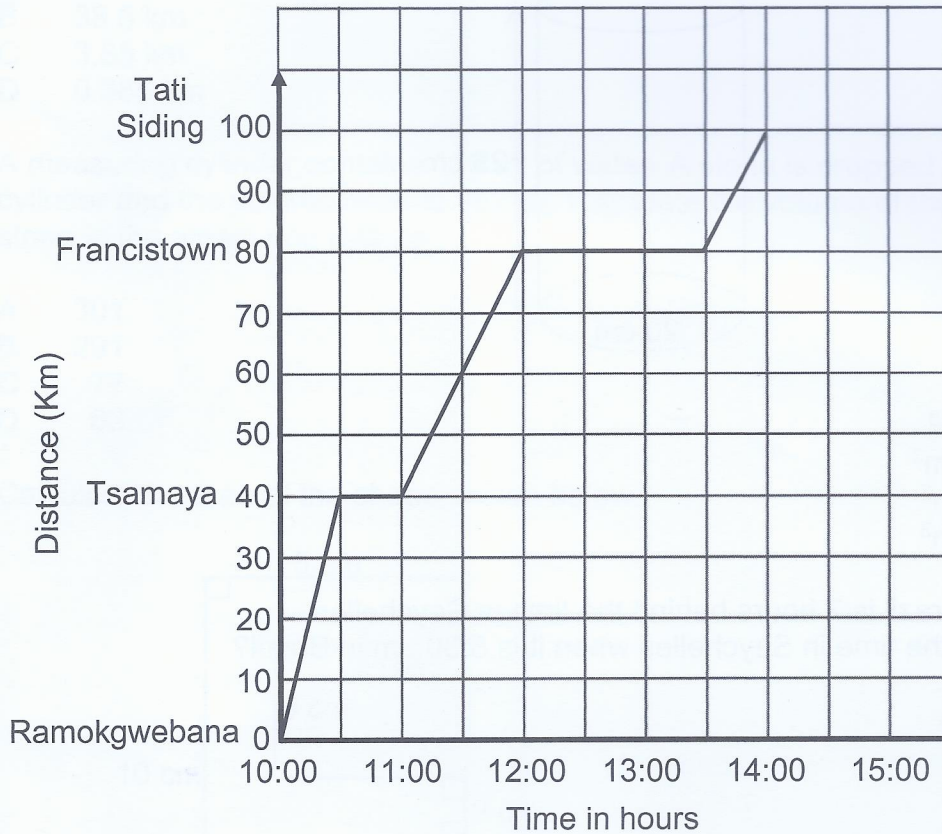
- A 18
- B 23
- C 28
- D 31

38. Calculate the volume of the cylinder shown below? Use $\pi = 3.14$.



- A 78.5 cm³
B 141.3 cm³
C 1570 cm³
D 7850 cm³
39. The time in Brazil is 7 hours behind the time in Seychelles.
What will be the time in Seychelles when it is 8:30 pm in Brazil?
- A 3:30 pm
B 1:30 pm
C 3:30 am
D 2:30 pm
40. Moses left Bobonong village at 1027 and arrived in Mahalapye at 1312 on the same day.
How much time did he take to travel from Bobonong to Mahalapye?
- A 2 hours 45 minutes
B 2 hours 55 minutes
C 3 hours 25 minutes
D 3 hours 45 minutes

The graph below shows the journey of a truck from Ramokgwebana to Tati Siding. Use it to answer questions 41 and 42.



41. How long did the truck stop at Tsamaya?
- A 30 minutes
 - B 40 minutes
 - C 60 minutes
 - D 90 minutes
42. Calculate the average speed of the truck from Ramokgwebana to Tati Siding.
- A 20 Km/h
 - B 25 Km/h
 - C 40 Km/h
 - D 80 Km/h
43. The mass of an empty lorry is 5900 kg.
The mass of the lorry when loaded with sand is 7295 kg.
What is the mass of the sand?
- A 2795 kg
 - B 2395 kg
 - C 1395 kg
 - D 1385 kg

44. What is 6:30 pm when expressed in 24 hour clock notation?

- A 0630
- B 0830
- C 1730
- D 1830

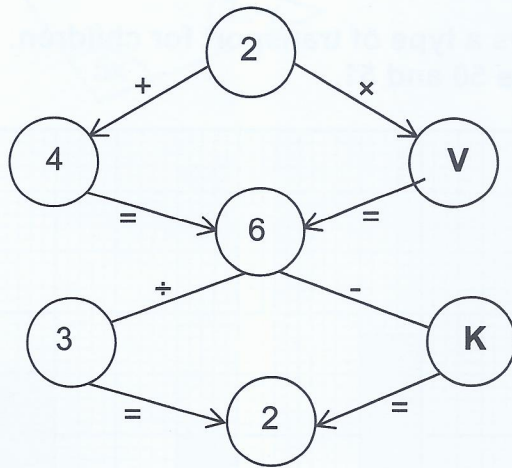
The diagram below shows digits 7, 5, 8, 9 written on cards P, Q, R, S.
A number is formed by arranging the cards.

P	Q	R	S
5	7	8	9

45. Which arrangement will give the largest number?

- A S, R, Q, P
- B R, Q, P, S
- C P, S, R, Q
- D Q, P, S, R

The diagram below shows a mathematical puzzle.
The arrows show the operations and the circles show numbers.
Use it to answer question 46.



46. What is the number represented by V and K?

	V	K
A	3	3
B	3	4
C	4	3
D	4	4



Use the information below to answer questions 47 and 48.

Marks obtained by 8 students in a test are as follows:
72, 30, 48, 64, 80, 20, 54, 48

47. What is the median mark?

- A 48
- B 51
- C 52
- D 60

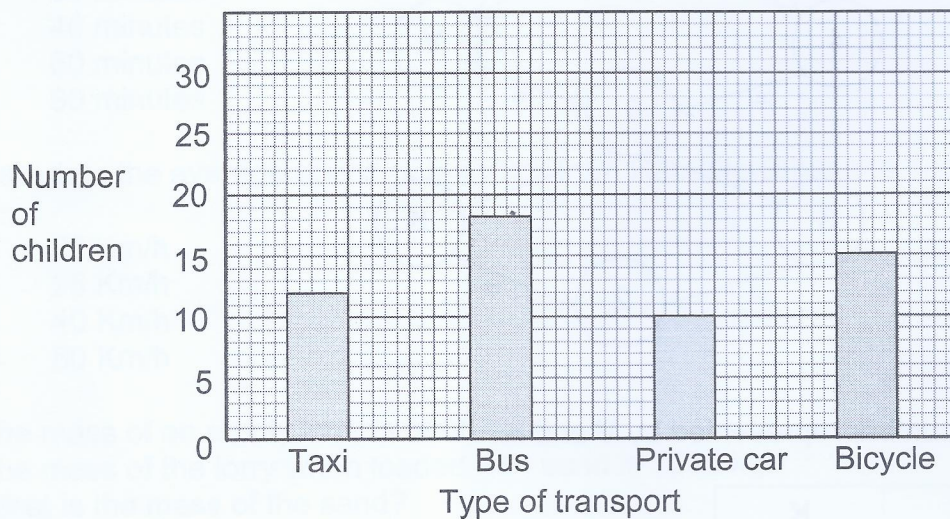
48. What is the mean mark?

- A 48
- B 51
- C 52
- D 60

49. Simplify the expression $8x + 5y - 2x + 3y$.

- A $10x + 8y$
- B $6x + 8y$
- C $9x - 5y$
- D $2x + 8y$

The bar chart below shows a type of transport for children.
Use it to answer questions 50 and 51.



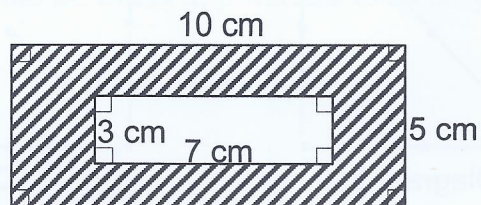
50. What is the total number of children who uses the bus and private car?

- A 56
- B 30
- C 28
- D 26

51. What is the modal type of transport?

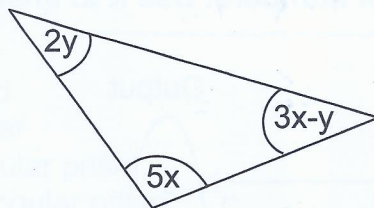
- A Bicycle
- B Bus
- C Private Car
- D Taxi

52. Calculate the area of the shaded region in the diagram below.



- A 10 cm^2
- B 29 cm^2
- C 55 cm^2
- D 71 cm^2

53. What is the sum of the angles of the triangle below in terms of x and y ?



- A $8x + 3y$
- B $8x - 3y$
- C $8x + y$
- D $8x - y$

The diagrams below show match sticks arranged in a pattern.
Use it to answer question 54.

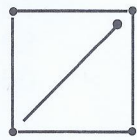


Diagram 1

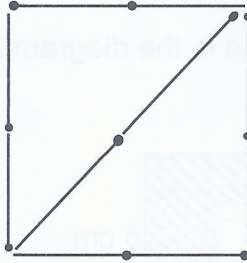


Diagram 2

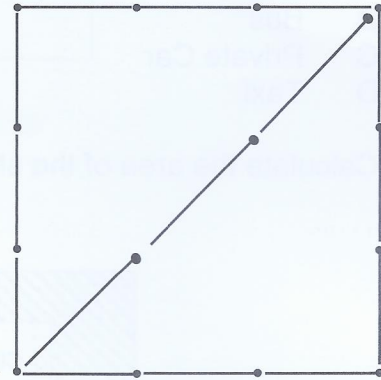
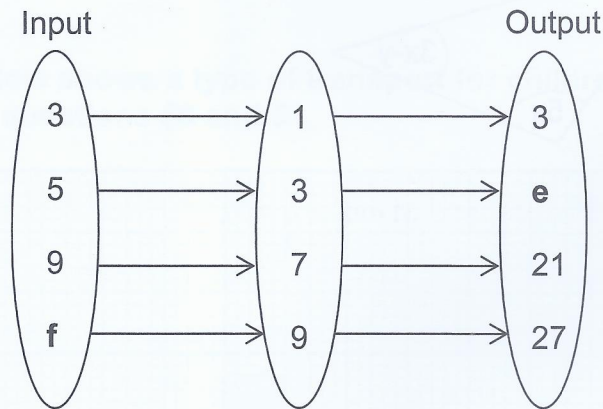


Diagram 3

54. How many match sticks are needed in diagram 4?

- A 20
- B 25
- C 30
- D 35

The diagram below shows a mapping of numbers. Use it to answer question 55.



55. Which numbers are represented by **e** and **f**?

- A **e** = 6 and **f** = 7
- B **e** = 7 and **f** = 15
- C **e** = 8 and **f** = 12
- D **e** = 9 and **f** = 11



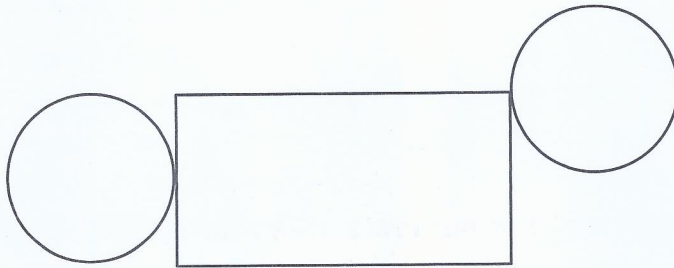
56. Tebogo weighs Y kg. Lorato weighs 8 kg less than Tebogo. The total weight of Tebogo and Lorato is 126 kg.
Which of the following shows an equation for the total weight of Tebogo and Lorato?

- A $Y + (Y + 8) = 126$
- B $Y + (Y - 8) = 126$
- C $Y + (Y \div 8) = 126$
- D $Y + (Y \times 8) = 126$

57. Which graph would be **most** appropriate to display shoe sizes?

- A Bar chart
- B Line graph
- C Pictograph
- D Pie chart

58. Which shape can be made from the net below?



- A Cuboid
- B Cylinder
- C Triangular prism
- D Rectangular prism

59. What is $5 \times 5 \times 5 \times 5$ expressed in index form?

- A 4^4
- B 4^5
- C 5^4
- D 5^5

60. There are 40 students in a class. The probability of choosing a boy from the class is $\frac{2}{5}$.

How many girls are there in the class?

- A 64
- B 56
- C 36
- D 24

